

US009638425B2

# (12) United States Patent Inada et al.

# (10) Patent No.: US 9,638,425 B2 (45) Date of Patent: May 2, 2017

## (54) CARTRIDGE-TYPE GAS GRILL

(71) Applicants: Iwatani Corporation, Osaka (JP);
Asahi Seisakusho Co., Ltd., Saitama
(JP)

(72) Inventors: **Kenichiro Inada**, Osaka (JP); **Akio Wada**, Saitama (JP)

(73) Assignees: Iwatani Corporation, Osaka (JP);
Asahi Seisakusho Co., Ltd., Saitama
(JP)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35

U.S.C. 154(b) by 367 days.

(21) Appl. No.: 14/260,797

(22) Filed: Apr. 24, 2014

(65) Prior Publication Data

US 2015/0075516 A1 Mar. 19, 2015

(30) Foreign Application Priority Data

Sep. 13, 2013 (JP) ....... 2013-190102

(51) **Int. Cl.**A47J 37/07 (2006.01)

F24C 3/12 (2006.01)

(52) **U.S. CI.**CPC ...... *F24C 3/12* (2013.01); *A47J 37/0713* (2013.01); *A47J 2037/0777* (2013.01)

### (56) References Cited

#### U.S. PATENT DOCUMENTS

#### (Continued)

## FOREIGN PATENT DOCUMENTS

JP H08-320122 A 12/1996 Primary Examiner — Avinash Savani Assistant Examiner — Rabeeul Zuberi (74) Attorney, Agent, or Firm — Osha Liang LLP

## (57) ABSTRACT

A structure which performs safety operation with certainty when a gas container is replaced or when an abnormality occurs and is easy to used is provided. A cartridge-type gas grill 11 having a plurality of systems includes two gas container accommodation sections 12; two burners 13; and gas flow paths for connecting the gas container accommodation sections 12 and the burners 13 in a one-to-one relationship. All the gas container accommodation sections 12 are each provided with a container attachment switch 19 for detecting that a gas container 15 is connected. Open/close valves 18, provided in the gas flow paths, for adjusting a gas flow are each formed of an electromagnetic valve. Operation knobs 63 each for making an operation on the corresponding open/close valve 18 are each provided with an ignition switch 20, which is turned ON when the corresponding open/close valve 18 is opened and is turned OFF when the corresponding open/close valve 18 is closed. The container attachment switches 19, the open/close valves 18, and the ignition switches 20 are electronically controlled. For an ignition process, the ignition switches are validated under the condition that all the container attachment switches 19 are ON. For a recovery process, all the ignition switches 19 need to be turned OFF.

# 4 Claims, 15 Drawing Sheets

